

Minutes of Paper Chart 2.0 Breakout Group, Mariners Workshop 26 Jan 2017

A short presentation was provided to provide background and the objective to align paper chart production with ENC release by generating both products directly from the Hydrographic Production Database.

The request by CHS for a review by Mariners was brought to the workshop as a result of the following factors:

- Offering three similar products is costly and work intensive
- Paper charts still and will continue to play a key role in safe navigation (in the absence of ENCs).
- Paper charts may be less frequently used for primary means of navigation but will remain critical to comply with Canadian Law (Canada Shipping Act and Charts and Nautical Publications Regulations) and for use as a back up to electronic charts
- Vital tool for training basic principles of safe navigation
- Going paperless is not for now, but mariners recognize that this may be inevitable in the future.
- The legal requirements surrounding the use of paper charts still represent a major component to be addressed (paper backup).
- CHS has been leading the way with ENC/Print-On-Demand/RNC from the same source.

Discussion points that were brought forward to solicit mariner input were:

- Review chart samples – a current (traditional) paper chart from the raster source, a paper chart generated from the ENC .000 file (paper Chart 2.0 prototype), and paper charts generated from the vector source database were reviewed (alternate paper Chart 2.0 prototype).
- Paper chart Overlaps – What is required for safe navigation and what is the minimum information required in the overlap area.
- Navaid names/characteristics/shape – are the names of all aids required, how much information is necessary with respect to the shape of the buoy using traditional paper chart symbology, is the shape important on a paper chart or is the colour and text the critical information?
- Maintenance effort required (producer side/user side) – replicating traditional cartographic techniques in a software environment is very time consuming to manually mask contours, adding source diagrams that can be replaced with the CATZOC value, and generalizing chart objects is very time consuming and provides no additional margin of safety.
- Needs when ENC coverage exists verses no ENC coverage – Are all paper chart scale bands necessary where there is extensive ENC coverage?

The findings of the discussion are summarized as follows:

- Same symbology for ENC and Paper could make it easier for mariners to switch between the two provided there is sufficient text such as light characteristics, buoy designators, and contour labels (could require updates to IHO INT 1).

- Mariners do not require contours to be masked and prefer distinct depth areas similar to ENCs.
- Land and cultural features are still required by the Mariner on paper charts and they would like additional features on the ENC.
- Text is important for a reference when a SAR situation occurs (buoy designators, points of land etc.). Current arrows need to indicate the maximum currents that can be expected.
- Text need not be curved or angled as long as the etc. does not obscure critical navigation information. Caris indicated that annotation can be done in HPD to reduce work required on the paper chart file.
- Mariners have indicated there is too much information in some areas, in particular on river charts with minimal navigational water is shown as a result of chart scale and in some shore areas on smaller scale (coastal) charts. Paper chart generation from the vector source adds information that is generalized for inset areas (Vancouver Harbour Second Narrows) that Mariners wanted to see.
- Mariners want to see more soundings on the paper chart and ENC.
- Paper still required by Law for non-ECDIS users and as a back-up to ECDIS.
- Paper charts could be a closer representation of ENC (International Standards are a challenge).
- Synchronization between ENC/RNC/Paper is a challenge for both producers and users. Users need to wait for the ENC to be released while non-navigational cartographic issues are resolved as a result of current standards that require extensive manual work by the hydrographer.
- Mariners are deprived of potentially more timely up-to-date products. John Conyon from IIC Technologies provided statistics from the Land Information New Zealand (LINZ) that 50% of the work in producing a paper chart is for non-navigation critical representation.
- CHS is faced with the burden of producing and maintaining multiple product lines.
- Mariners want input into the symbology set will be used in the production of the next generation of paper charts (updated IHO INT or a CHS specific symbology).
- Overlap of charts does need not be substantial. Minimal symbology on one of the charts (the smaller scale) is sufficient. Area could be shaded or designated with cross hatches to indicate full symbology is available on the adjoining chart.
- Extensive symbology is not required on charts where a larger scale is available but generalization increasing the work required by hydrographers.
- Vector based paper and raster charts result in a smaller file size and improved resolution for the mariner.